

REMARKS

Responsive to the Office Action mailed on December 27, 2007 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the reference number "4" in the description. Claims 1-6 are objected to for informalities because "the hydrophilic grindstone sponge" is sometimes referred to as "the hydrophilic sponge" or "the grindstone". Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman et al (2,789,352, hereinafter "Wiseman") in view of van Leuwen et al (4,008,189, hereinafter "Leuwen") and further in view of Furuzono et al (EP1508586 A1, hereinafter "Furuzono"). Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Kliger (3,911,922, hereinafter "Kliger").

In this paper, the term "the hydrophilic sponge" recited in claims 2-3 and the term "the grindstone" recited in claim 5 have been amended to recite "the hydrophilic grindstone sponge." Claims 1, 5 and 6 are further amended according to the suggestion of the Examiner. Applicant submits that the objections to claims and the rejections under 35 U.S.C. 112 are thereby overcome.

In addition, claim 1 is amended to recite an undulated latch plate fixing the hydrophilic grindstone sponge by folding the edge thereof into the interior of the core for gripping. Support for this amendment can be found, for example, in the original claims and throughout the original specification and drawings. Furthermore, the second and third alternative limitations of claim 4 are divided into separate claims 7 and 8. Thus, on entry of this amendment, claims 1-8 remain in the application.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Objections to the Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they **do not** include the reference number "4" in the description. See page 1, paragraph 1 of the Office action.

Applicant first notes that Figs. 1-7 of the drawings as originally filed **do** include the reference number "4". In addition, reference number "4" is described on page 5, line 6 of the specification as originally filed. Withdrawal of the objection to the drawings is respectfully requested.

Rejections Under 103(a)

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and further in view of Furuzono. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Kliger. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

As amended, claim 1 recites a prophy chip, mounted on the top of a dental rotary instrument for cleaning, polishing, and burnishing teeth, comprising:

a hollow cup-shaped core with canopy (semispherical), cylindrical, cupped, conical, inverted conical, or disk profile;

a shaft containing a connecting means for connecting the prophy chip to the dental rotary instrument to avoid vibration around the rotation axis of the core during rotation;

a hydrophilic grindstone sponge covering the core, wherein the hydrophilic grindstone sponge comprises a grindstone therein; and

an undulated latch plate fixing the hydrophilic grindstone sponge by folding the edge thereof into the interior of the core for gripping;

wherein the hydrophilic grindstone sponge is immersed in water prior to operation or absorbed saliva during operation without using a polishing paste to dissipate heat generated by friction.

Wiseman discloses a tooth polishing cup, wherein the cup is formed of soft rubber. The cup comprises: a reservoir 18 containing tooth polishing material 19; a shank 6; a bulbous end 5; and a shank-equipped latch piece 4 fixing the bulbous end to shank 6. Leuwen discloses a hydrophilic polyurethane sponge. Furuzono discloses a polyurethane-base material containing grindstone $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$.

In the rejections, the Examiner identifies shank piece 4 of Wiseman as the alleged latch plate of claim 1. In Wiseman, a tooth polish cup formed by soft rubber and may be provided with a base 2 that is formed with a socket 3 for securing the cup onto a shank piece 4. The shank piece has a bulbous end 5 adapted to be held in socket 3. A reservoir 18 (hollow core) is provided for the tooth polishing material. See, column 2, lines 10-15 and column 3, lines 9-11 of Wiseman.

Applicant respectfully submits that Wiseman fails to teach or suggest an undulated latch plate for fixing the hydrophilic grindstone sponge by folding the edge thereof into the interior of the core, as recited in claim 1. Applicant further submits that the other applied references are silent in this regard.

In addition, the Examiner relies on Leuwen's hydrophilic polyurethane sponge in combination with Wiseman's device to teach the hydrophilic grindstone sponge of the claims. However, Applicant notes that claim 1 is drawn to a prophylactic chip comprising a latch plate for fixing the sponge by folding the edge thereof into the interior or the bottom of the core. To the contrary, the hydrophilic polyurethane sponge of Leuwen cannot be folded into the interior of the reservoir (core) 18 of Wiseman. Thus, even if one skilled in the art substitutes a hydrophilic polyurethane

sponge of Leuwen for the soft rubber to cover reservoir (core) 18 as argued by the Examiner, the prophy chip of the claims still cannot be obtained.

Furthermore, amended claim 4 recites that the core of the prophy chip of claim 1 or 2 is reticular or porous and at least one water soluble agent consisting of a foaming agent, a sweetener, a fragrance, a medicament for inhibiting or preventing periodontal diseases or dental caries.

In the rejections, the Examiner identifies Kliger's surgical polyurethane sponge as the teaching a porous sponge, and argues that "[i]t would have been obvious ... to modify Wiseman/van Leuwen/Furuzono by making the hydrophilic sponge nonwoven and porous so that water can be absorbed and released easily." See page 5, paragraph 2 of the Office action. However, Kliger merely discloses a surgical polyurethane sponge, which are nonwoven and a three-dimensionally continuous, porous film. Kliger does not disclose a reticular or porous core. Applicant submits that the surgical sponge of Kliger, which is soft and pliable when wet (column 1, lines 45-46), cannot be substituted for the alleged "core" relied upon in the rejections (i.e., reservoir 18 of Wiseman). In this regard, Applicant notes that reservoir 18 of Wiseman is not reticular or porous. In addition, the other cited references (Leuwen, Furuzono) also fail to disclose the reticular or porous core of the invention.

It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claims 1 and 4. For at least this reason, a *prima facie* case of obviousness cannot be established in connection with these claims. Furthermore, as it is Applicant's belief that a *prima facie* case of obviousness is not established for claims 1 and 4, the Examiner's arguments in regard to the dependent claims will not be addressed here. Allowance of claims 1-6 is respectfully requested.

New Claims 7 and 8

Applicant submits that new claims 7 and 8 are allowable at least by virtue of their dependency from claim 1. In addition, with respect to claim 8, Applicant submits that the applied references, even when combined, fail to teach or suggest the core is filled with a water-retaining sponge immersed in the water soluble agent, wherein the water soluble agent is releasable from the surface of the hydrophilic grindstone sponge covering the core.

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Examiner: MAI, HAO D, Art Unit 3732
In response to the Office Action dated December 27, 2007

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Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so. The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to Deposit Account No. **502447**.

Respectfully submitted,

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